

AVIATION

The Oldest American Aeronautical Magazine

DECEMBER 29, 1924

Issued Weekly

PRICE 10 CENTS



Messenger plane, suspended from airship TC5, prior to being launched from it

VOLUME
XVII

SPECIAL FEATURES

NUMBER
26

OUR PLACE IN AVIATION
DETAILS OF THE CURRY BILL
F.B.A. 19 AMPHIBIAN FLYING BOAT
ON "A SUGGESTED NATIONAL AIR POLICY"

GARDNER PUBLISHING CO., INC.
HIGHLAND, N. Y.
225 FOURTH AVENUE, NEW YORK

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THE CURTISS EXHIBITION CO., Inc.
Garden City, N. Y.

DECEMBER 29, 1924

AVIATION

VOL. XVII. NO. 26

Published every Monday

CONTENTS

Editorials	1453	The Curry Bill	1462
Place in Aviation	1454	Government Bids and Awards	1463
New Approves N.A.C.A. Aircraft Policy	1455	Light Planes and Gliders	1465
"A Suggested National Air Policy"	1459	Airports and Airways	1465
Course of Aircraft Manufacturers	1460	United States Air Forces	1467
F.B.A. 19 Amphibian Flying Boat	1461		

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AVIATION

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The Independent Air Force

IF the Curry Bill, recently introduced in Congress, the prospects and prospects of a separate air force have suddenly concrete to consider. As no legislation of this character is likely to receive serious consideration at this time in Congress, the Bill will only serve a useful purpose in stimulating discussion.

In introducing his Bill Mr. Curry accompanied it by the following preamble:

"The time has come when the United States must take its due share in the development of the world's air power. In the progress of the world, and in the progress of the world, the development of our aviation, due to rapid concentration, or in national defense, in the way that the airplane does."

"Today all other first class nations have created Departments of the Air—co-ordinated with their armies and navies and in some instances a primary consideration instead of regarding it as an appendage of other services. The United States can create the best coordinated service in the world because we have the best men to man the planes, the best machines, and all the raw material that go into their construction."

"A strong military aviation will guarantee our integrity and independence because an enemy must come to us either through the air or over the water, and air power dominates both."

"The measure will prevent duplication in expenditures and will be the highest efficiency of the least possible cost."

That there is a very strong sentiment outside the Service as well as in the Department is evident from the numerous bills introduced in Congress. Since the Aviation Measure introduced by the President recommended some central department, there has been a constantly growing impression that doing less than the creation of a separate Department, despite with the responsibility for all governmental aviation, will solve the problems that have confronted this branch of government work.

The Curry Bill has the merit of direction and clarity. It is not a compromise. All aeronautical work of the government is placed in charge of a civilian who will sit with the General. Perhaps this is the most important provision in the Bill. The aviation has lacked in compact and uncoordinated direction. Scattered as it has been through all the bureaus, spending large sums of money, directed by ever changing personnel, it is natural that a civilian has been created that will be a single treatment.

The President stated that the United States was spending less money for its aerial work. This is more than most of the Departments put together. On the basis of aviation alone, a separate Air Department should receive equal consideration. But the terms of the service in

equally important in the discussion. There has been a distinct lowering in the phase of our air work. Naval aviation is not attracting younger officers, while the Air Service of the Army is constantly becoming less satisfied with conditions as they exist. The morale of the Marine Corps has always been the highest in our Services. The reason for this lies in its continuous and viridly independent status. A similar condition would probably result in a separate Air Force. The present second rate and shifting personnel have not made for progressive advancement.

Whether or not the present Curry Bill is the best answer to the present situation remains to be considered at hearings. It is at any rate bound to become a stern center when it comes to the hearings.

Speaking of the Navy's "Backbone"

THOSE who are conscious of naval aircraft only as fleet auxiliaries and doubt or deny the potentiality of air power against capital ships, generally have one of these arguments on the fact that naval aircraft have not as yet the equipment that make them self-reliant on the high seas. Consequently, they say, no boarding or torpedo planes could engage a fleet of capital ships on the high seas, aircraft should be decorated as offensive factors in naval warfare.

Those critics seem to overlook the fact that an important naval engagement in the history of the world has ever been fought very far from shore—see Coronet, the Falklands and Jutland in the last war—and also that the capital ship itself cannot stay away for a very long time from a naval base. In the connection it will come as a shock to the old school of Navy strategists to read what Horatio G. Bywater, the well known English naval expert has to say on the subject. It may be recalled that Mr. Bywater is by no means an advocate of air power, but a staunch believer in the leadership "backbone." He writes in the *Mailman* issue of Oct. 3, 1924:

"There is something about patriotism in the other dependence of the modern fleetship on its base which. Unable to stay at sea more than a week or two at a time, its freedom of action is actually less than that of the old sailing warship, which could cruise for months on end without touching at a port. The adoption of the Diesel engine in place of steam machinery may double the endurance of the warship, of course, but the base factor will nevertheless continue to dominate every problem of naval strategy."

Mr. Bywater's remarks extend our vista as to how air power can measure its strength with sea power. That a coast well defended by aircraft would be an extremely unattractive place to approach even for the strongest fleet is hardly disputed since the "backbone" extends to the Virginian Capes. But it is not so generally realized that one of the most fearful objections for boarding airplanes in future wars will be the naval base of the enemy.

Our Place in Aviation

By MAJOR L. T. JONES

University of California

The author has endeavored to display our statistical information in such form that it will represent quite correctly the present trend of development in aviation. A number of authors have written on the subject of progress in aviation but few have given the subject more than cursory mention. It seems to be necessary to combine the wonderful progress in aeronautical development that was made during the War. Scarcely of the accompanying figures will indicate that our remarkable progress during the War did not consist in unexpected development of airplanes. It is quite true, however, that progress during the War was rapid and though it is well to show on the curves of Figs. 14, 15, 16, and 17 that it is acceleration present. It consisted in aeronautical

but true state in Fig. 17, for example, unaccountable flights of lower altitude have been made none of which should have any bearing in determining the shape of the maximum altitude curve.

Landlord has forbade the extension of the present investigation in light planes, seaplanes, gliders, and lighter-than-air craft.

It is greatly to be regretted that data published in aeronautical publications are not characterized by the same constant

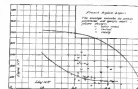


Fig. 2. The horsepower of French airplane engines shown as a function of their weight in pounds per horsepower

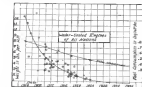


Fig. 1. The specific weight and fuel consumption of water-cooled airplane engines as a function of the time in years

ness, classification, and application of the information relating to airplane design. During this period design was placed on a sufficiently firm and exact foundation that we shall never again have to airplane-developer experience similar to that encountered in endeavoring to adapt the Bristol Siphon to the Liberty motor. It is with some assurance and confidence that a designer now predicts performance of his design. A newly designed airplane that will not fly is now almost as rare as a newly constructed boat that fails to float.

A Necessary Survey

In his Walker Wright lecture Commander Hunsaker has summarized in a very able manner information relating to structural defects and the relations of parts of airplane structures. He has not treated the subject from the point of view of the present work, nor does the present article deal with the vast amount of information available in structural statistical records. Indeed, it is to be hoped that someone having access to complete airplane records will be detailed to spend the several months that will be necessary to complete the survey that has now been started. It is to be hoped that an abridgement of this work may prove valuable as a guide to future development.

It will be noticed that in a number of figures, such as Fig. 27, the curve drawn passes through the maximum value and does not represent the average value. This must necessarily

¹Estimate of Aerodynamic Weight. *Aerial Age*, Vol. 7, p. 471 (1924).
²Present Data. *Progress in Aeronautics*, March, April, May, Vol. 7, p. 753.
³Estimate of Aerodynamic Weight. *Aerial Age*, Vol. 7, p. 471.
⁴Estimate of Aerodynamic Weight. *Aerial Age*, Vol. 7, p. 471.
⁵Estimate of Aerodynamic Weight. *Aerial Age*, Vol. 7, p. 471.
⁶Estimate of Aerodynamic Weight. *Aerial Age*, Vol. 7, p. 471.
⁷Estimate of Aerodynamic Weight. *Aerial Age*, Vol. 7, p. 471.
⁸Estimate of Aerodynamic Weight. *Aerial Age*, Vol. 7, p. 471.
⁹Estimate of Aerodynamic Weight. *Aerial Age*, Vol. 7, p. 471.
¹⁰Estimate of Aerodynamic Weight. *Aerial Age*, Vol. 7, p. 471.

and reliability that we feel is purely scientific work. Indeed, it is by no means the case that engineers in published records of performance is confined to our foreign competitors.

Engine Development

The variety of types of aircraft engines that have been designed during the past twenty years constitutes an amazing array. Justification may be lacking, but for the present we shall consider water-cooled engines as typical of past and

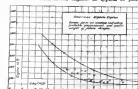


Fig. 3. The horsepower of American airplane engines shown as a function of their weight in pounds per horsepower

future aeronautical engine development. Radial and other air-cooled engines may or may not supplant the water-cooled, we shall not enter into a discussion of that. It seems quite probable that the rotary engine will pass quietly out of existence. The reliability, weight, and fuel consumption of water-cooled engines are sufficiently good compensating. Fig-

1 shows the chronological development of water-cooled engines of all nations from the Wright Brothers engine of 1903 and an improved model down to those of the present year. The development of the airplane engine has decreased from 18.7 to 15 pounds per horsepower. It is encouraging to see that

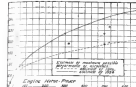


Fig. 4. Estimated maximum possible speed of airplanes as a function of horsepower

15 to 16 miles per hour consumption has decreased from 1903 to 1934, thus 9.5 lb/hp. We look forward to 1935 as when we shall have passed the 1 lb/hp mark. Fuel consumption has decreased the fuel consumption to 0.4 lb/hp. At present, the period of wonderful development the reliability of engines has continually improved. The points represented are naturally do not include engines for lighter-than-air or engines for other than land airplane purposes.

French Engines and American Engines

Figs. 1 and 3 show the relation of horsepower to pounds per horsepower for French and American airplane engines respectively. Points representing water-cooled engines are included in Fig. 1, radial by r , and rotary by R . The two curves in Fig. 3 are envelopes enclosing the points represent-

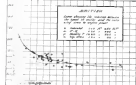


Fig. 5. Speed of British airplanes shown as a function of the wing area per horsepower

ing air-cooled engines. In Fig. 3 the lower curve represents radial engines, the upper curve, those of rotary engines. The points on the curve representing engines of that design. The points on the upper curve of this envelope represent engines of the most modern design. It seems probable that the maximum of the enclosed Hispano-Suiza design will be an engine of little more than 600 hp. weight 100 lb. At an early date the envelope indicates that French design will tend to an engine of weight 650 to 1000 hp and 1 lb/hp per horsepower.

¹Estimated April, 1934, p. 715

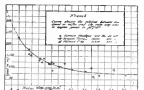


Fig. 6. Speed of French airplanes shown as a function of the wing area per horsepower

Fig. 3 representing American water-cooled (W) and radial (r) engines indicates that American design will lead to an engine of 700 to 1000 hp and weighing 1 lb/hp. Some of the lower points of the curve of Fig. 3 represent engines of American design, we are not particularly optimistic as believing that the American engine design will be the first to reach the 1 lb/hp. The relative knowledge of the envelopes of Fig. 2 and 3 indicate that the American engine designer has been less impractical in his creation of types as that the predictions of our American manufacturers have indicated his imagination. The one line part of Fig. 3 not lying within the envelope represents the 500 hp, 100-lb, W type Air Service engine.

Speed and Horsepower

Our rapid change of progress in the matter of aeronautical engineering is indicated by Fig. 4 where the dotted curve indicates the maximum possible performance of airplanes as estimated by Biot¹ in 1908. The solid curve represents our present attainments. It is at once the solid curve passes through 1000 hp and 1000 lb, the maximum value. There are quite naturally many points lying below the solid curve and even below the dotted curve because our present planes are not designed for speed alone.

Speed, Wing-Area and Horsepower

Figs. 5, 6 and 7 show the relation between airplane speed in miles per hour and the ratio of wing area to horsepower for British, French, and American airplanes respectively. Points are plotted for a considerable number of airplanes in terms of the size or type as shown only as they are land planes. It is quite remarkable how nearly the points lie on a smooth curve. If an additional feature such as the landing speed were introduced it is quite possible that the points would

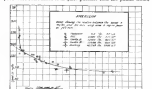


Fig. 7. Speed of American airplanes shown as a function of the wing area per horsepower

Douglas. As a rule, however, the motors used in Germany have been under 15 hp., in other countries they have been greater than 15 hp. This indicates that the way in which construction in Germany has gone from over-powered, by way of restriction, to less and less limited restrictions, is well considered in all its applications." In England, the United States and France there is a marked tendency to proceed in the direction of increased horsepower, but countries like Italy, France and the U. S. will make a list of all that might have been gained from the glider experiments. "An increase in performance of light planes, forced by means of increasing motor power signifies progress," Druggins is a native ruler of the steel and the resulting refinements, both aerodynamic and structural. That there is much to be done that is both interesting and promising has been shown by glider experiments.

Langsdorff returns again to the matter of performance and low power. He says that light performance tends to be useless for police purposes and may cause safety a demonstration value in military use. The contemporary light plane, in countries other than Germany, is in the upper range of horsepower otherwise it is inferior to it. The associated English motor at Lympne (1932) was equipped with motors developing from 15 to 20 hp. These English tests are by no means a new performance, now already before the war we had done with smaller motors. Even after the war, under performance were achieved with motors of the same size. The Russian airplane is a machine giving such a performance with a motor of the same size, however, the Russian motor is not a simple machine, it is a machine for design, not its construction was the hard edge given in the glider experiments employed. We note here how Dr. Langsdorff is still making progress in the use of the glider experiments. The glider experiments are demanded for more direct practical use, in order to secure greater engineering economy, and in the end, a far greater practicability. Our demands are supported of such scientific results. "We note, however, that a motor-developing of 20 hp. can hardly be regarded as a low-powered motor. Even for a two-seater, this power is too high."

An Interesting Progress

It is certainly a wonderful bit of success on the part of the motor manufacturer to obtain 15 to 20 hp. from a motor of 150 cc. displacement, or 30 hp. from a motor of 250 cc. displacement. Success obtained with such small engines, however, motor construction and light plane construction is not a matter to be underestimated if one succeeds in developing high-powered motors which with the same fuel consumption have more power than the engine which has the performance of such a motor. It is not to the point, and light plane perfection cannot be considered as having been achieved with the motor improvement.

Those who are framing the Rules for the 1935 Competition might find Dr. Langsdorff's remarks on light plane competition programs of interest. He says: "One should divide first upon a definite minimum performance that must be demanded if the light plane is to be considered practical. The future development should then be viewed with reference to maximum practicability. There should be contests in which the maximum performance is to be achieved with the least possible horsepower. Those directing the competitions should then determine the maximum power allowed from engine to contest according to the progress shown. It would be useful in such contests to test the peak power of the motor. In this way one might foster with great advantage of high peak power combined with low displacement. Every contest in horsepower over the established maximum would be profitable. The prize would be given for the achievement of the required maximum performance with the lowest displacement and the lowest peak power."

The determining factor in this sort of forced development would have to be the practical use of the craft. One cannot develop, depend on a certain engine power, but if there is to be progress in the development of the light plane, it must be pushed in the direction of motorless rather than in the direction of over-powered planes.

Dr. Langsdorff does not agree with the point of view expressed by Von Lachmann that "the sort of very much motorized

craft like the 'Wieser' whose motor has a peak performance of 30 hp. has only a demonstrative or historical value when being a 'Gibbschmaschine'." He says that single motors with 150 cc. motors which have a peak output of 30 hp. have a high place and must have limited restrictions. Instead of encouraging the development of such craft, he says that it is more advantageous to develop those with 250 cc. motors which give 150 hp. motors. The motor which is used in the two-seater, resembling that of the new English plane and not on a single-engine limit. Dr. Langsdorff points out, however, that motors of this size can be built to develop well over 30 hp. and that such two-seater hardly deserves praise, one might have made years ago with two persons on two persons. To show that two-seater flights at low power are not impractical and are not to be considered only as the means of perfecting motor performance, Langsdorff refers to the recent flight of Schreck and Klemm on the Daimler light aircraft a 9 hp. motor. It is just such development of light motors that could be the best. It is two-seaters that will be in demand in light planes in its development and sport demands.

Today's Opportunity

The problem and the opportunity today is to develop the light airplane, and not merely to take the flying craft and give them the name of light planes. The instructor is in the direction of the wrong kind of light craft is responsible not only outside of Germany, Langsdorff says, but a German as well. The light airplane is not a machine for venturing motors, it is to be expected only when all expenses are thrown overhead.

The book offers a great many examples from all types of light planes, including all the small planes in the light of motor flight. Each is illustrated. The reader will find in many of the small sketches valuable information for detailed construction. Light plane motors are described with the motor only incidentally to the plane in which they are used. Several of the American light planes are described and illustrated. Some of the most prominent French machines that are still considered as being of the light plane class, are also described. As Langsdorff says, the light plane is the motor of "Das Leichtflugzeug" is very useful indeed.

New N.A.C.A. Report on Light Planes

The report on English single-engine light planes which the National Advisory Committee for Aeronautics published last summer received such an enthusiastic response from the readers of AVIATION, who recognized its value, that the committee has decided to publish it in full. A new one has been prepared among the two-seaters which participated in the contest held at Lympne, England, Sept. 20 to Oct. 4, 1934.

For those who do not read the *Aviation and Flight*, the two British magazines from which this material was taken, this report will be found to be very useful. We hope shortly to publish a more complete review of this report. Until then, we should like to advise those who wish to know more to obtain a copy by writing to the National Advisory Committee for Aeronautics, 2041 Navy Building, Washington.



AIRPORTS AND AIRWAYS

Hudley Field Opened

Hudley Field, the new eastern terminus of the transatlantic line, was opened on Dec. 15 with the dispatch of a 15-45 a. m. of the first westbound plane, and with the arrival of a 11-45 a. m. of the first east plane from the West. Hudley Field is about five miles from Washington, D. C. and is about five miles from New York City via Pennsylvania Railroad. The plane was sent to the field in motor trucks, loaded into a plane and pilot James Earl stepped off, bound for Cleveland, Ohio, via the Erie.

Pilot Fred Collins brought in the first mail from the West.

Payroll by Airplane

James the dreamer again that comes to the Curtis Engine Co. of Garden City, Mass. was recently the weekly subscription of a \$5,000 pay roll by airplane to New Market, N. J. The money was forwarded by the Springfield Committee Co. for its employees who were building the hangar at the Hudley Field.

The money was carried in a Curtis Orville piloted by Gene Jones, who was accompanied by William H. Arthur of the construction company, and Howard H. Ingalls, of the Air Mail. All three men were armed to defend the possibility of a holdup. The Springfield company considered it safe to carry the money by air then by automobile.

Glenn Curtiss News

by E. F. Shaw

Not Roy McWhorter and Walter Winchell, who have returned from Washington, D. C., where they were looking at the plans for the new airport at Garden City, Mass., as a project against on working out some new designs. Mr. McWhorter has been very ill for the past few weeks, but is now on the road in his motor. It is reported that the McWhorters have purchased all of Mr. Curtiss' designs.

Each company can be heard in business, arrive on the ground U. S. Airways System. It is particularly noted that Curtiss does not appear on it. Just who is to be in charge of the Curtiss Company is unable to tell. Officers of General Field have no comment.



P. A. Thomas

The Curtis Orville which carried a \$5,000 payroll in Hudley Field—Curtis Jones, the pilot, was standing in the cockpit in front of the plane as W. H. Arthur and H. H. Ingalls

State ships in a flock, including species of every age, dropped in several lots on Turkey Bottoms recently, caught up and proceeded for different destinations southward. We learned out but were only able to interview one. The fishermen of Toronto, Canada, the last to take off. Mr. Bennett hoped to be home in time of the southern part of the winter, because in the northern waters next spring. He is flying a Cessna, and has it in the shape.

Air and flying-out of Curtiss is reported good. It there is anything in this, surely the steady plane as to lands at the postholes have done their part. Street lanes have been placed in several sections and the chutes have been landed, leaving the Air Mail.

Denver News

by Gen. F. Chase

At the present time nearly all the flying activity in Denver, Colo., is carried on by the 220th Observation Squadron, 48th Division Air Service, Colorado National Guard, with Maj. William H. Devine as command, Capt. M. G. Robinson as Squadron Officer.

This squadron has one day and is functioning regularly and smoothly. Since June 1st of this year about 500 flying hours have been put on, with no injuries or deaths to any of the personnel, which number about one hundred and twenty-five officers and men. They are operating on their own initiative, known as Liberty Field, which according to Air Service officers, after an aviation officer who was killed flying in France. Francis Brown Lewis.

The field is in excellent shape and is about three-quarters of a mile square. It is exactly one mile above sea level, and has the distinction of being the highest, regularly established airbase in the United States, and is our knowledge in the world. It has northward of Denver and is clearly marked by two standard type beacons which have, Liberty Field, Denver, Colorado 1250 feet, painted in white on their top.

Maj. William H. Devine, pilot, and Capt. J. H. Corbin, observer, of the 220th Squadron, carried off first honors at the annual aerial games, met for National Guard units at Belling Field last October.

New World Records

The National Aeronautics Association has just received notice from the *Fédération Aéronautique Internationale* that new world records for its planes and airplanes, established by that body as follows:

CLASS C—(AIRCRAFTS)
With useful load of 4009 kg. (8833 lb.)

Aircraft:
Lieut. H. B. Harris, U.S.A.S., and Mechanician
Doug. Colner, Barring Number, 6 Liberty, 400 hp., at Wilbur Wright Field, Dayton, Ohio, Oct. 3, 1934. 1343 m.
4472 ft.

Aircraft:
Lieut. H. B. Harris, U.S.A.S., and Mechanician
Doug. Colner, Barring Number, 6 Liberty, 400 hp., at Wilbur Wright Field, Dayton, Ohio, Oct. 3, 1934. 1343 m.
4472 ft.

Aircraft:
Lieut. J. A. McManis, U.S.A.S. (Martin)
Bomber, N181, 2 Liberty 400 hp., at Wilbur Wright Field, Dayton, Ohio, Oct. 2, 1934. 9253 m.
30393 ft.

Aircraft:
Lieut. J. A. McManis, U.S.A.S. (Martin)
Bomber, N181, 2 Liberty 400 hp., at Wilbur Wright Field, Dayton, Ohio, Oct. 2, 1934. 9253 m.
30393 ft.

Examination for Junior Acre Engineer

An examination for junior aeronautical engineer will be held throughout the country on Jan. 21, 1939. It is to be held in some of the various branches of the Government service, an entrance salary of \$3,400 a year. Advancement in pay may be made without change in assignment up to \$2,400 a year.

Applicants must have been graduated with a degree in engineering, preferably aeronautical engineering, from a college of recognized standing, or must be senior students in such course and furnish proof of actual graduation within three months from the date of the examination. Applicants who have completed two full years of engineering study in a college of recognized standing may substitute for each additional year of the formal education requirement a year of actual aircraft engineering experience.

The duties of the position are to perform such work as routine testing, performing field work, making computations, pointing in product of experimental research tests, computing reports, handling technical correspondence, and other related work.

Candidates will be rated on general physics, pure mathematics, practical questions in aeronautical engineering and related subjects, and aptitude.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the post office or subpostoffice in any city.

Austrian Air Service

Aviation in Austria has been developing rapidly during the last few years aided by a keen interest on the part of the general public. General C. H. Foster Vienna reports to the Department of Commerce, Austria's aviation school in Europe has added greatly to this development and undeniably comes as increased activity in the future.

Several companies are operating austria air services. One of these is the Austrian Aero Club. The Austrian Aero Club-Franco-Romanian Air Navigation. Austria has established a route from Vienna to Prague and Paris, and to Budapest and Constantinople. The Hungarian Air Traffic Co. operates between Vienna and Budapest. The German-Austrian Luftverkehr A. G. (Transaustria Lines) operates between Vienna

and Munich, connecting with a Munich-Berlin-Graz line, and with the Munich-Berlin line, it also operates a complex service between Vienna and Budapest.

Austria has four landing fields in and from which mail and passengers are transported by automobile. The Johann and Aspern fields near Vienna, the Theresia field near Graz, and the Leopoldsdorf field near Klagenfurt. The latter is controlled by the Federal Ministry for Commerce and Traffic, but only the Aspern field is used in a large extent. The Johann field, situated on the banks of the Danube, belongs to the Österreichische Luftverkehrs A. G.

Air traffic to and from Vienna during the first six months of 1939 averaged for 1,038 flights and carried 231 passengers and 46,729 kg. of mail and merchandise.

Development of Danish Air Traffic

The development of commercial aviation in Denmark has passed considerable stages during the past few years. Commercial flying in that country was first attempted in 1918, but regular air transport was not put into operation in Denmark until 1924. In that year the Government founded a society in the Danish Air Traffic Co. for the maintenance of the service from Copenhagen to Hamburg. During the six months' flying period of 1924, 94 per cent of the trips were successfully completed, and 414 passengers, 3/2 tons of mail, and 600 kg. of mail were carried.

The company now operates, in cooperation with a German and Dutch company, a regular service, twice daily between Copenhagen and Hamburg, and a daily service between Copenhagen, Amsterdam and Rotterdam. In addition to the normal traffic many business men carry letters and parcels, and rapid means of communication between Europe is created.

According to present plans, the Danish Air Traffic in April, 1939, will double its services on both the Hamburg and Rotterdam routes. Experiments in a north-south air route, made with a view to increasing the practicability of mail flights from Copenhagen to Berlin, via Berlin. If these experiments are successful, regular night services will be established.

Sweden Fosters Commercial Aviation

Commercial aviation in Sweden will receive a new impulse from the most important step which has just been taken. One of the recommendations by the Royal Board of Trade that the Government establish a fund of 2,500,000 kronor (about \$1,250,000) for the purpose of subsidizing the development of the aviation, just announced, to build an airplane factory in Sweden.

Malings, which also expects an appropriation from the Government, the Government definitely the aviation school in Sweden. It is a joint project of Swedish air line from Hamburg and Copenhagen.

A Swedish company has recently established a new air mail between Malmo and Copenhagen, Denmark. It is called the ferry trip across the Sound which takes about one hour, airplanes cover the distance in ten minutes. Usually three trips are made daily in each direction, but on special days as many as fourteen trips have been made. During the first two months of operation 2,000 passengers were carried over this route.

A company route was established by another Swedish company during the summer of 1934. The planes of this company fly between Malmo, Helsingborg, and Copenhagen, and the ferry trip across the Sound which takes about one hour, airplanes cover the distance in ten minutes. Usually three trips are made daily in each direction, but on special days as many as fourteen trips have been made. During the first two months of operation 2,000 passengers were carried over this route.

Round Japan Seaplane Flights

A flight on light around Japan in four days with four aircraft, each with four engines, was completed by the Japanese seaplane fitted with a Japanese built Hispano-Suiza engine. The flight was made for a prize given by a shipyard in Osaka. The winner of the flight was Captain Kuroki. The flight was made for a prize given by a shipyard in Osaka. The winner of the flight was Captain Kuroki. The flight was made for a prize given by a shipyard in Osaka. The winner of the flight was Captain Kuroki.

This is the longest flight in Japan was made in 1931 by Lieutenant Higuchi, who flew as a Salomon observation plane from Tokyo to Changhae, Manchuria, covering 750 km. in two days.

UNITED STATES AIR FORCES

U. S. ARMY AIR SERVICE

Plane Hooks and Unhooks Airlift

The double feat of an airplane hooking itself on to an airplane in the air was accomplished at an altitude of 1,600 ft. and in a time of 10 seconds, was accomplished from the first time at Scott Field, Belleville, Ill. on Dec. 15.

The feat was by the Army major, VCS and the plane was a C-12. The feat was accomplished by the first time at Scott Field, Belleville, Ill. on Dec. 15.

The feat was by the Army major, VCS and the plane was a C-12. The feat was accomplished by the first time at Scott Field, Belleville, Ill. on Dec. 15.



The U. S. Army Messenger plane which Lieut. Clyde Frazier (standing right) hooked on to another biplane and unhooked on Dec. 15.

hooking, unhooking, and hooking on to another biplane, was accomplished at an altitude of 1,600 ft. and in a time of 10 seconds, was accomplished from the first time at Scott Field, Belleville, Ill. on Dec. 15.

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Feiler in the Messenger plane had started his engine. It had been agreed by both pilots before taking off that the airplane would be taken to an altitude of 1,600 ft. and hooked directly into the wind at full throttle. It was also arranged that Lieutenant Feiler would swing off either to the right or to the left immediately after releasing from the airplane in case that, if necessary, the crew could save the ship down at a steep angle with a possibility of striking or interfering with the plane in any way.

The actual hooking of the plane is described by Lieutenant Al Ror in the following terms:

"We had no prearranged signal for leaving but rather than for us to let him know when we had hooked 1,600 ft. This I did not realize that we were going until I noticed over the side that we had about 100 ft. before and to the left. It was a matter of at least a minute before I felt the static effect of the hook of the plane. This was not particularly great except to the fact that the motion was wide open. The ship did not spin at all, or move unaccountably in any way. As no time, either while remaining in the air or after its release, was any difficulty experienced in hooking the ship. Lieutenant Feiler stated that he at all times had perfect vision, control in his ship and could slide it over to the right or left on the bar by a slight movement of the rudder and could not lose direction in descent or depression the size of his plane."

Lake Park News

The following news from Lake Park, Ga., is of interest to the members of the American Association of the Air Service. The members of the American Association of the Air Service. The members of the American Association of the Air Service. The members of the American Association of the Air Service.

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Air Orders

Order 200, relating to First Lieut. Philip Schenberger, A.S., assigned to relieve Lieutenant Schenberger from duty at Kelly Field, and to order him to be transferred to San Francisco and act as transport Jan. 30, 1939.

Order 201, relating to San Lieut. Charles C. Higgins, A.S. (Inf.), Brock Field, to Fort Belvoir.

Order 202, relating to San Lieut. Charles C. Higgins, A.S. (Inf.), Brock Field, to Fort Belvoir.

Order 203, relating to San Lieut. Charles C. Higgins, A.S. (Inf.), Brock Field, to Fort Belvoir.

Order 204, relating to San Lieut. Charles C. Higgins, A.S. (Inf.), Brock Field, to Fort Belvoir.

*By arrangement with Lieut. J. A. McManis, U.S.A.S. Operations date is also a record made with 2000 and 4000 hp. motor used. The time is also a world record 1000 useful load of 1200 kg.

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U. S. NAVAL AVIATION

Coast-to-Coast Flight for ZRS
Proposed for a coast-to-coast flight by the Air Force for
Los Angeles, formerly the ZRS, are considered to be delayed in
progress under consideration by Secretary Wilbur. The
company, he said, depends on a check now to proceed in the
possibility of releasing letters to get the ship out of the
hospitals.

But Admiral Moffat has ordered Congress that it is
planned to send the Los Angeles to land points to try to
get out, after which she would probably be used to France.

It is assumed that the proposed trip to the west Coast will
be regarded as a test flight to provide a passenger voyage in
a commercial mode. Admiral Moffat has stressed the belief
that "the best place for operating lightships on ships is
not water and not over land."

"In going over water they do not have to climb. They do
not get almost 100 ft. up, and therefore they will not have to
climb."

Quick Photographic Work
A Naval F-11 plane operating in connection with work
with the Battle Fleet off San Pedro, Calif., took an
aerial photograph developed it and dropped prints on land
the battleship California. This is considered as one of
a first as it indicates possibilities in aerial war that can
be used, when valuable pictures can be obtained and delivered
regularly from reconnaissance planes so that the ship's
commander could get first hand knowledge of the situation.

Publisher's News Letter

"Dear Bill" or "Dear Mabel" is probably the
way this letter should start. It is really a letter
from Washington, where aviation seems to be
discussed in every official building. The Christmas
spirit seems to be remembering the flying fraternity
at last—perhaps in some quiet little no such
as, but the great and significant fact that stands
out in every visitor's mind is that everyone from
the President down is thinking aviation and wishing
to give it a large place in the affairs of the
country.

Before we take you on a trip around the
Capital it is not too late to send the season's greetings
to the loyal and ever-growing group of readers who
find in AVIATION a weekly account of aerial
progress. Our efforts for 1928 will be directed
toward making the year one of very pleasant
and hope, profitable exchange of aeronautical in-
formation. In this way we intend to contribute
to the very happy and prosperous year that we hope
all our readers will have. If present indications
are true signs of the near future, Santa Claus
has not forgotten his fellow aviators. While
Dinner and Hittin' and Come and Visit are
singing their bells with the sounds of the firm's
engine, they seem to be carrying to the distant
people of this part of the world a substantial hope
for better things to come. In fact, some one has
suggested that Santa Claus might be given a
special place of distinction among fliers, for being
the most successful and popular visitor the world
has ever known. Perhaps some bright mind in
one of the numerous Aero Clubs may pick up this
very happy suggestion and endorse it. Nick by
appropriate inaugural ceremony.

Let permit the Postmaster General to extend the
Air Mail—this is now issued in a direct route
from New York to San Francisco—to any other
place or to establish new routes. After vigorous
discussion it passed the House and has an excellent
chance of passing the Senate. It will mean a
great step forward to have these extremely useful
possible.

The other bill that Major La Guardia placed
through happy air was the Kelly bill which authorizes
the Postmaster General to make contracts with
civilian pilots to operate Air Mail routes on
specific terms. Four-fifths of all the receipts may
be given to civilian operators as well as other
arrangements that require authorization by law.

At this time of the year when the Air Mail
is encountering its worst weather conditions, and
is having its schedule seriously damaged, the
great wave of confidence from Congress will be
appreciated. With warm snow-bound, blizzards
sweeping across the country, with service crippled
and roads made impassable by snow, the Air Mail
pilots are winning their way through, over us
winter, the adverse weather conditions and keeping
the airman's faith.

At the Capital also the appropriations for the
Army, Navy and Post Office are proceeding to
their final presentation. The Budget Bureau and
the Departments have presented the government's
annual needs to Congress and very soon there
will be enacted, it is hoped, a series of appropriations
that will be given aviation in the country an
impetus of long needed. President Coolidge
gave \$65,000,000 as the total amount the Government
is spending on all activities. Others place the
figure at more than fifty millions. At any rate the
sum of AVIATION is not some kind of the com-
plicated costs but had its effect. Everyone is talking
about it. Out of a most entire a deeper conception of
value received and overheads wanted.

Across the way two very important hearings are
going on. The Wilbur bill is being considered
in one room while the Air Service Investigating
Committee is meeting in another. Let us look in
on the Committee. Wilbur is the man in the Secretary
of Commerce telling the Congressmen that he
believes that there should be regulation of aircraft
and pilots. He says that he believes a civilian de-
partment should handle it—not the military. He
quotes the well known statistical conclusions to
show the extent of aeronautical activities. It was

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The next few months will be full of interest for the flying fraternity

1) the airplane to continue as a more auxiliary in the American Navy? Has the prospect that the battleship
is the backbone of the fleet undergone any modification in naval circles?

These questions and the numerous issues which they bring up are being discussed now by the General Board
of the Navy at the President's direction. They will be answered in the report of the General Board.

The Largest Committee, appointed by Congress to investigate the air service and decide upon a definite air
policy for the United States is developing a fund of amazing information. Its recommendations will be the
basis for government legislation which will vitally affect the future of American air power, military and commercial.
What are we getting for our money? What may we expect to get?

Congress is now considering the new appropriations for Government aviation activities. The hearings of the
Appropriations Committee will uncover matters of exceptional interest to everyone interested in the development
of aviation. The Appropriation Act will show how our air power is to be built up.

The Window Bill, which will touch every pilot and commercial aviation interest, will again be presented to
Congress. Everyone interested will want to follow the discussions and hearings on this bill.

This winter there will be heated discussions in and outside of Congress on the advisability of an emergency
for a separate air force. Representative Clegg of California has proposed a bill for a separate air force. The
Army Air Service is for it. The Navy is against it and a brilliant display of fireworks is due.

The winter months are the time when aviation politics and policies are under discussion and in process of
change. Everyone should watch this situation closely. There will be no reason for saying that "some-
thing was put over" if the people who will actually be affected follow closely the situation and make their
influence felt at Washington.

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